

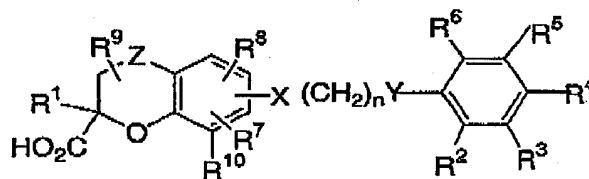
U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 2

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims

1. (Currently Amended) A compound having the formula I:



I

or a pharmaceutically acceptable salt or prodrug thereof, wherein:

Z is selected from the group consisting of CH₂ and C=O;

R¹ is selected from the group consisting of Cl, Br, F and C₁₋₄ alkyl, wherein said C₁₋₄ alkyl is linear or branched and is optionally substituted with 1-3 halogens independently selected from F and Cl, 1 phenyl which is optionally substituted with 1-3 halogens, or a mixture thereof;

Ar is Aryl, wherein Aryl is in each instance optionally substituted with 1-5 substituents independently selected from (a) halogen, (b) C₁₋₅alkyl, (c) C₂₋₅alkenyl, (d) C₂₋₅alkynyl, (e) -OC₁₋₅alkyl, (f) -OC₂₋₅alkenyl, (g) -OC₂₋₅alkynyl, (h) -SO_xC₁₋₅alkyl, (i) -SO_xNR^aR^b, (j) -SO_xphenyl, (k) -C(O)C₁₋₃alkyl, and (l) -C(O)NR^aR^b, wherein in each instance, each alkyl, alkenyl and alkynyl is linear or branched and is optionally substituted with (a) 1-5 halogen atoms, (b) 1-2 groups independently

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 3

selected from -OC₁₋₃alkyl, which is linear or branched and is optionally substituted with 1-5 halogens, or (c) a mixture thereof, and wherein phenyl is optionally substituted with 1-3 substituents independently selected from halogen, C₁₋₃alkyl, and C₁₋₃alkoxy, wherein C₁₋₃alkyl and C₁₋₃alkoxy are linear or branched and are optionally substituted with 1-5 halogens;

x is selected from 0, 1 and 2;

Aryl is a carbocyclic 6-10 membered monocyclic or bicyclic aromatic ring system;

Hetcyc is a 5- or 6-membered saturated or partly saturated monocyclic heterocycle having 1-4 heteroatoms independently selected from N, S, and O in the ~~perimeter of the ring~~, wherein N may optionally be NR^a and S may optionally be SO or SO₂;

Benzoheterocycle ~~comprises~~ contains a 5 or 6-membered heterocyclic ring which may be saturated, partly unsaturated or aromatic, and a benzene ring, wherein said heterocyclic ring and said benzene ring are fused together, wherein said heterocyclic ring ~~comprises~~ contains 1-3 heteroatoms independently selected from O, S, and N in the ~~perimeter of the ring~~, where N may optionally be NR^a, and S may optionally be SO or SO₂;

R^a and R^b are independently selected from the group consisting of H, C₁₋₅alkyl, C₂₋₅alkenyl, C₂₋₅alkynyl, -C(O)C₁₋₅alkyl, -C(O)C₂₋₅alkenyl, -C(O)C₂₋₅alkynyl, SO_xC₁₋₅alkyl, SO_xphenyl, SO_xNR^dRe, -C(O)NR^dRe, halogen, and phenyl, wherein in all instances, alkyl, alkenyl, and alkynyl are linear or branched and are optionally substituted with (a) 1-5 halogen atoms, (b) 1-3 groups independently selected from -OCH₃, -OCF₃ and phenyl, or (c) a mixture thereof, wherein phenyl in all occurrences is optionally substituted with 1-3 substituents independently selected from halogen, C₁₋₃alkyl, and C₁₋₃alkoxy, said C₁₋₃alkyl and C₁₋₃alkoxy being linear or branched and optionally substituted with 1-5 halogens;

R^d and R^e are independently selected from H, C₁₋₅alkyl, C₂₋₅alkenyl, C₂₋₅alkynyl, and phenyl, wherein said alkyl, alkenyl, and alkynyl are linear or branched and are optionally substituted with (a) 1-5 halogen atoms, (b) 1-3 groups independently selected from -OCH₃, -OCF₃ and phenyl, or (c) a mixture thereof, wherein phenyl in all occurrences is optionally substituted with 1-3 substituents

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 4

independently selected from halogen, C₁₋₃alkyl, and C₁₋₃alkoxy, said C₁₋₃alkyl and C₁₋₃alkoxy being linear or branched and optionally substituted with 1-5 halogens;

X and Y are independently selected from the group consisting of O and S;

n is an integer from 1-6;

R² is selected from the group consisting of Cl, Br, F and C₁₋₄alkyl, wherein said C₁₋₄alkyl is optionally substituted with 1-3 halogens; R³, R⁵, R⁶, R⁷, R⁸, R⁹ and R¹⁰ are H;

R⁴ is selected from the group consisting of Benzoheterocycle, C₃₋₈Cycloalkyl, Hetcyc, -OC₃₋₈Cycloalkyl and R^c;

wherein Benzoheterocycle, C₃₋₈Cycloalkyl, Hetcyc and -OC₃₋₈Cycloalkyl are each optionally substituted with 1-3 groups independently selected from halogen, C₁₋₅alkyl, C₂₋₅alkenyl, C₂₋₅alkynyl, -OC₁₋₅alkyl, -OC₂₋₅alkenyl, -OC₂₋₅alkynyl, C₃₋₈Cycloalkyl, -SO_xC₁₋₅alkyl, -SO_xNR^aR^b, -SO_xphenyl, C(O)C₁₋₃alkyl and -C(O)NR^aR^b, wherein in all instances, said C₁₋₅alkyl, C₂₋₅alkenyl, and C₂₋₅alkynyl groups are linear or branched and are optionally substituted with 1-3 halogens, and wherein Hetcyc, -OC₃₋₈Cycloalkyl and C₃₋₈Cycloalkyl may optionally have a C₃₋₆-spiro-cycloalkyl substituent on the ~~ring where gem-disubstitution of a ring carbon is possible, wherein~~ ring, wherein the spiro-cycloalkyl group is optionally substituted with 1-2 groups independently selected from methyl, trifluoromethyl, methoxy, trifluoromethoxy and halogen;

wherein R^c is selected from the group consisting of halogen, -OH, -OSO₂C₁₋₈alkyl, -OSO₂C₃₋₈Cycloalkyl, -OSO₂Ar, C₁₋₈alkyl, C₂₋₈alkenyl, C₂₋₈alkynyl, -OC₁₋₈alkyl, -OC₂₋₈alkenyl, -OC₂₋₈alkynyl, and Aryl, wherein said -OSO₂C₁₋₈alkyl, C₁₋₈alkyl, C₂₋₈alkenyl, C₂₋₈alkynyl, -OC₁₋₈alkyl, -OC₂₋₈alkenyl, and -OC₂₋₈alkynyl are linear or branched, and are optionally substituted with (a) 1-5 halogens, (b) 1-2 groups independently selected from -OC₁₋₃alkyl, which are linear or branched and which are optionally substituted with 1-5 halogens, (c) 1 group selected from Aryl and C₃₋₈Cycloalkyl, or (d) a mixture of one or more of (a), (b) and (c), and Aryl and C₃₋₈Cycloalkyl are each optionally substituted as defined under Ar for Aryl and R⁴ for C₃₋₈Cycloalkyl;

or alternatively R⁴ and the adjacent substituent R³ or R⁵ may be connected to form a 5- or 6-membered heterocyclic ring that may be saturated, partly unsaturated or aromatic fused to the

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 5

benzene ring, wherein the 5- or 6-membered fused ring ~~comprises~~ contains 1-3 heteroatoms independently selected from O, S, and N, where N may optionally be NR^a and S may optionally be SO or SO₂, said fused ring optionally also ~~comprising~~ containing 1-2 C=O groups in the ~~perimeter~~ of the ring, wherein said 5- or 6-membered heterocyclic fused ring is optionally substituted with 1-2 groups independently selected from R³.

2. (Cancelled)
3. (Original) A compound having formula I as recited in Claim 1, wherein X and Y are O.
4. (Original) A compound having formula I as recited in Claim 1, wherein Z is CH₂.
5. (Original) A compound having formula I as recited in Claim 1, wherein Z is C=O.
6. (Original) A compound having formula I as recited in Claim 1, wherein n is 3 or 4.
7. (Cancelled)
8. (Cancelled)
9. (Original) A compound having formula I as recited in Claim 1, wherein the group -X- is attached to the benzopyran ring at the 6-position of the benzopyran ring.
10. (Original) A compound having formula I as recited in Claim 1, wherein the group -X- is attached to the benzopyran ring at the 7-position of the benzopyran ring.
11. (Original) A compound having formula I as recited in Claim 1, wherein R¹ is selected from a group consisting of C₁₋₄alkyl, Cl and F, wherein alkyl is linear or branched and is optionally substituted with 1-5 F.

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 6

12. (Original) A compound as recited in claim 1, wherein Ar is phenyl, which is optionally substituted with 1-4 groups independently selected from Cl, F, C₁₋₅alkyl, -OCH₃, -OCF₃, -SO_xC₁₋₅alkyl, -SO_xNR_aR_b, -SO_xphenyl, -C(O)C₁₋₃alkyl, and -C(O)NR_aR_b, wherein phenyl of -SO_xphenyl is optionally substituted with 1-3 substituents independently selected from halogen, CH₃, CF₃, -OCF₃, and -OCH₃, and wherein alkyl in all occurrences is linear or branched and is optionally substituted with 1-5 halogens.

13. (Previously Presented) A compound as recited in claim 1, wherein R¹ and R² are each independently selected from a group consisting of C₁₋₄alkyl, Cl and F; n is 2-4; X and Y are O; Z is CH₂; and in all occurrences, alkyl is linear or branched and is optionally substituted with 1-5 F.

14. (Previously Presented) A compound having formula I as recited in Claim 1, wherein R² is Cl or F; and R¹ is C₁₋₄alkyl, Cl or F, where C₁₋₄alkyl is linear or branched and is optionally substituted with 1-5 F.

15. (Cancelled)

16. (Original) A compound as recited in Claim 1, wherein R^a and R^b are independently selected from the group consisting of H, C₁₋₅alkyl, -C(O)C₁₋₅alkyl, S(O)_xC₁₋₅alkyl, S(O)_xphenyl, and phenyl, wherein alkyl in all occurrences is linear or branched and is optionally substituted with 1-5 halogen atoms, and wherein phenyl in all occurrences is optionally substituted with 1-3 substituents independently selected from halogen, C₁₋₃alkyl, and C₁₋₃alkoxy, wherein C₁₋₃alkyl and C₁₋₃alkoxy are linear or branched and are optionally substituted with 1-5 halogens.

17. (Cancelled)

18. (Previously Presented) A compound as recited in Claim 1, wherein R⁴ is R^c, and R² is Cl, Br or F.

19. (Currently Amended) A compound having Formula I as recited in Claim 1, wherein R⁴ is joined to R³ or to R⁵ to yield a benzoheterocycle which ~~comprises~~ contains a 5 or 6-membered heterocyclic ring which may be saturated, partly unsaturated or aromatic fused to the benzene

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 7

ring, wherein said benzoheterocycle is selected from the group consisting of benzoxazole, benzisoxazole, benzofuran, indole, benzothiophene, benzthiazole, benzodiazene, quinazoline, benzoxazine, benzisoxazine, benzimidazole, and benzpyrazole, wherein said benzoheterocycle is optionally substituted on the heterocyclic ring with 1-2 groups independently selected from halogen, phenyl, C₁-4alkyl, and -OC₁-4alkyl, wherein C₁-4alkyl and -OC₁-4alkyl are linear or branched and are optionally substituted with 1-5 halogens, and said phenyl is optionally substituted with 1-5 substituents independently selected from halogen, C₁-3alkyl and C₁-3alkoxy groups, wherein the C₁-3alkyl and C₁-3alkoxy groups are linear or branched and are optionally substituted with 1-5 halogens.

20. (Original) A compound having formula I as recited in Claim 19, wherein R⁴ and R³ or R⁵ are joined together to form a benzisoxazole ring, which is optionally substituted on the isoxazole ring with 1 group selected from C₁-4alkyl and phenyl, wherein C₁-4alkyl is linear or branched and is optionally substituted with (a) 1-3 halogens, (b) 1 phenyl, or (c) a mixture of (a) and (b); and phenyl in all occurrences is optionally substituted with 1-3 groups independently selected from halogen, C₁-3alkyl and -OC₁-3alkyl, wherein said C₁-3alkyl and -OC₁-3alkyl are linear or branched and are optionally substituted with 1-3 halogens.

21. (Original) A compound having Formula I as recited in Claim 1, wherein R⁴ is selected from the group consisting of C₃-8Cycloalkyl and Hetcyc, each of which is optionally substituted with 1-4 substituents independently selected from halogen, phenyl, C₁-5alkyl, and -OC₁-5alkyl, wherein C₁-5alkyl and -OC₁-5alkyl are linear or branched and are optionally substituted with 1-5 halogens, and phenyl is optionally substituted with 1-5 substituents independently selected from halogen, C₁-3alkyl and -OC₁-3alkyl, wherein C₁-3alkyl and -OC₁-3alkyl are linear or branched and are optionally substituted with 1-5 halogens, and wherein two substituents on the same carbon of said C₃-8Cycloalkyl and Hetcyc may optionally join together to form a C₃-6-spiro-cycloalkyl group, wherein the spiro-cycloalkyl group is optionally substituted with 1-2 groups independently selected from methyl, trifluoromethyl, methoxy, trifluoromethoxy and halogen.

22. (Currently Amended) A compound having Formula I as recited in Claim 21, wherein R⁴ is Hetcyc or C₃-6Cycloalkyl, wherein Hetcyc is a saturated heterocyclic compound having 1-2 heteroatoms in the ~~perimeter of the ring~~ and is otherwise as defined in Claim 1, and C₃-6Cycloalkyl is a saturated 3-6-membered cycloalkyl, wherein Hetcyc and C₃-6Cycloalkyl optionally have 1-2 substituents independently selected from halogen, C₁-3alkyl and C₂-3alkenyl, wherein said C₁-3alkyl

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 8

and C₂-3alkenyl are linear or branched and are optionally substituted with 1-3 halogens, or alternatively two substituents may be joined on one carbon atom of the ring to form a spiro-cycloalkyl group having 3-6 carbons.

23. (Original) A compound having formula I as recited in Claim 22, wherein R⁴ is selected from piperidine, 1,4-dioxane, tetrahydropyran, piperazine, morpholine, cyclohexane, cyclopentane, cyclobutane and cyclopropane, wherein R⁴ is optionally substituted as defined in Claim 22.

24. (Original) A compound having formula I as recited in Claim 23, wherein R⁴ is R^C and is selected from the group consisting of halogen, C₁-8alkyl, C₂-8alkenyl, C₂-8alkynyl, -OC₁-8alkyl, -OC₂-8alkenyl, -OC₂-8alkynyl, and Aryl, wherein C₁-8alkyl, C₂-8alkenyl, C₂-8alkynyl, -OC₁-8alkyl, -OC₂-8alkenyl, and -OC₂-8alkynyl are linear or branched, and are optionally substituted with (a) 1-5 halogens, (b) 1-2 groups independently selected from -OC₁-3alkyl, which are linear or branched and which are optionally substituted with 1-5 halogens, (c) 1 group Aryl or C₃-8Cycloalkyl, or (d) a mixture of more than one of (a), (b) and (c), wherein Aryl and C₃-8Cycloalkyl are optionally substituted with 1-3 substituents independently selected from halogen, C₁-3alkyl and -OC₁-3alkyl, said C₁-3alkyl and -OC₁-3alkyl being linear or branched and optionally substituted with 1-5 halogens, phenyl or C₃-6Cycloalkyl.

25. (Original) A compound having formula I as recited in Claim 24, wherein R⁴ is selected from the group consisting of C₁-4alkyl and -OC₁-4alkyl, wherein said C₁-4alkyl and -OC₁-4alkyl are linear or branched and are optionally substituted with one C₃-6Cycloalkyl group, 1-5 halogens independently selected from Cl and F, or a mixture of both.

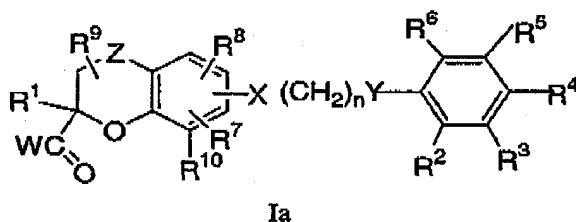
26. (Previously Presented) A compound having formula I as recited in Claim 24, wherein Aryl is phenyl; R¹ is selected from a group consisting of C₁-4alkyl, Cl and F, wherein alkyl is linear or branched and is optionally substituted with 1-5 F; and R² is selected from Cl and F.

27. (Previously Presented) A compound having formula I as recited in Claim 1, wherein R¹ is C₁-4alkyl, Cl or F; and R² is Cl or F.

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 9

28. (Previously Presented) A compound having formula I as recited in Claim 1, wherein R^1 is selected from linear or branched C_{1-4} alkyl, Cl and F; R^2 is Cl or F; Z is CH_2 ; and R^4 is selected from halogen, phenyl, C_{1-3} alkyl, $-OC_{1-3}$ alkyl, C_{3-6} Cycloalkyl, and tetrahydropyran, wherein said C_{1-3} alkyl and $-OC_{1-3}$ alkyl groups are linear or branched and are optionally substituted with (a) 1-5 halogen atoms, (b) 1 group selected from phenyl, C_{3-6} Cycloalkyl, and linear or branched $-OC_{1-3}$ alkyl optionally substituted with 1-5 halogens, or (c) a mixture of (a) and (b), and wherein said phenyl, C_{3-6} Cycloalkyl and tetrahydropyran groups are optionally substituted with 1-2 groups independently selected from halogen, $-OCH_3$, $-CH_3$, $-OCF_3$, and $-CF_3$.

29. (Currently Amended) A compound having formula Ia:



or a pharmaceutically acceptable salt or metabolite thereof, wherein

W is selected from the group consisting of $-OR^{13}$, $-OCH_2OR^{13}$, $-OCH(CH_3)OR^{13}$, $-OCH_2OC(O)R^{13}$, $-OCH(CH_3)OC(O)R^{13}$, $-OCH_2OC(O)OR^{13}$, $-OCH(CH_3)OC(O)OR^{13}$, and $-NR^{14}R^{14}$, wherein each R^{13} is independently selected from C_1-C_6 alkyl optionally substituted with one or two groups independently selected from $-CO_2H$, $-CONH_2$, NH_2 , $-OH$, $-OAc$, $NHAc$ and phenyl; and wherein each R^{14} is independently selected from H and R^{13} ; wherein

Z is selected from the group consisting of CH_2 and $C=O$;

R^1 is selected from the group consisting of Cl, Br, F and C_{1-4} alkyl, wherein said C_{1-4} alkyl is linear or branched and is optionally substituted with 1-3 halogens independently selected from F and Cl, 1 phenyl which is optionally substituted with 1-3 halogens, or a mixture thereof;

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 10

Ar is Aryl, wherein Aryl is in each instance optionally substituted with 1-5 substituents independently selected from (a) halogen, (b) C₁-5alkyl, (c) C₂-5alkenyl, (d) C₂-5alkynyl, (e) -OC₁-5alkyl, (f) -OC₂-5alkenyl, (g) -OC₂-5alkynyl, (h) -SO_xC₁-5alkyl, (i) -SO_xNR^aR^b, (j) -SO_xphenyl, (k) -C(O)C₁-3alkyl, and (l) -C(O)NR^aR^b, wherein in each instance, each alkyl, alkenyl and alkynyl is linear or branched and is optionally substituted with (a) 1-5 halogen atoms, (b) 1-2 groups independently selected from -OC₁-3alkyl, which is linear or branched and is optionally substituted with 1-5 halogens, or (c) a mixture thereof, and wherein phenyl is optionally substituted with 1-3 substituents independently selected from halogen, C₁-3alkyl, and C₁-3alkoxy, wherein C₁-3alkyl and C₁-3alkoxy are linear or branched and are optionally substituted with 1-5 halogens;

x is selected from 0, 1 and 2;

Aryl is a carbocyclic 6-10 membered monocyclic or bicyclic aromatic ring system;

Hetcyc is a 5- or 6-membered saturated or partly saturated monocyclic heterocycle having 1-4 heteroatoms independently selected from N, S, and O in the ~~perimeter of the ring~~, wherein N may optionally be NR^a and S may optionally be SO or SO₂;

Benzoheterocycle ~~comprises~~ contains a 5 or 6-membered heterocyclic ring which may be saturated, partly unsaturated or aromatic, and a benzene ring, wherein said heterocyclic ring and said benzene ring are fused together, wherein said heterocyclic ring ~~comprises~~ contains 1-3 heteroatoms independently selected from O, S, and N in the ~~perimeter of the ring~~, where N may optionally be NR^a, and S may optionally be SO or SO₂;

R^a and R^b are independently selected from the group consisting of H, C₁-5alkyl, C₂-5alkenyl, C₂-5alkynyl, -C(O)C₁-5alkyl, -C(O)C₂-5alkenyl, -C(O)C₂-5alkynyl, SO_xC₁-5alkyl, SO_xphenyl, SO_xNR^dR^e, -C(O)NR^dR^e, halogen, and phenyl, wherein in all instances, alkyl, alkenyl, and alkynyl are linear or branched and are optionally substituted with (a) 1-5 halogen atoms, (b) 1-3 groups independently selected from -OCH₃, -OCF₃ and phenyl, or (c) a mixture thereof, wherein phenyl in all occurrences is optionally substituted with 1-3 substituents independently selected from halogen, C₁-3alkyl, and C₁-3alkoxy, said C₁-3alkyl and C₁-3alkoxy being linear or branched and optionally substituted with 1-5 halogens;

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 11

R^d and R^e are independently selected from H; C₁-5alkyl, C₂-5alkenyl, C₂-5alkynyl, and phenyl, wherein said alkyl, alkenyl, and alkynyl are linear or branched and are optionally substituted with (a) 1-5 halogen atoms, (b) 1-3 groups independently selected from -OCH₃, -OCF₃ and phenyl, or (c) a mixture thereof, wherein phenyl in all occurrences is optionally substituted with 1-3 substituents independently selected from halogen, C₁-3alkyl, and C₁-3alkoxy, said C₁-3alkyl and C₁-3alkoxy being linear or branched and optionally substituted with 1-5 halogens;

X and Y are independently selected from the group consisting of O and S;

n is an integer from 1-6;

R² is selected from the group consisting of Cl, Br, F and C₁-4alkyl, wherein said C₁-4alkyl is optionally substituted with 1-3 halogens;

R⁴ is selected from the group consisting of Benzoheterocycle, C₃-8Cycloalkyl, Hetcyc, -OC₃-8Cycloalkyl and R^c;

wherein Benzoheterocycle, C₃-8Cycloalkyl, Hetcyc and -OC₃-8Cycloalkyl are each optionally substituted with 1-3 groups independently selected from halogen, C₁-5alkyl, C₂-5alkenyl, C₂-5alkynyl, -OC₁-5alkyl, -OC₂-5alkenyl, -OC₂-5alkynyl, C₃-8Cycloalkyl, -SO_xC₁-5alkyl, -SO_xNR^aR^b, -SO_xphenyl, C(O)C₁-3alkyl and -C(O)NR^aR^b, wherein in all instances, said C₁-5alkyl, C₂-5alkenyl, and C₂-5alkynyl groups are linear or branched and are optionally substituted with 1-3 halogens, and wherein Hetcyc, -OC₃-8Cycloalkyl and C₃-8Cycloalkyl may optionally have a C₃-6-spiro-cycloalkyl substituent on the ring ~~where gem-disubstitution of a ring carbon is possible, wherein~~ ring, wherein the spiro-cycloalkyl group is optionally substituted with 1-2 groups independently selected from methyl, trifluoromethyl, methoxy, trifluoromethoxy and halogen;

wherein R^c is selected from the group consisting of halogen, -OH, -OSO₂C₁-galkyl, -OSO₂C₃-8Cycloalkyl, -OSO₂Ar, C₁-galkyl, C₂-galkenyl, C₂-galkynyl, -OC₁-galkyl, -OC₂-galkenyl, -OC₂-galkynyl, and Aryl, wherein said -OSO₂C₁-galkyl, C₁-galkyl, C₂-galkenyl, C₂-galkynyl, -OC₁-galkyl, -OC₂-galkenyl, and -OC₂-galkynyl are linear or branched, and are optionally substituted with (a) 1-5 halogens, (b) 1-2 groups independently selected from -OC₁-3alkyl, which are linear or branched and which are optionally substituted with 1-5 halogens, (c) 1 group selected from Aryl and C₃-8Cycloalkyl, or (d) a mixture of

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 12

one or more of (a), (b) and (c), and Aryl and C₃₋₈Cycloalkyl are each optionally substituted as defined under Ar for Aryl and R⁴ for C₃₋₈Cycloalkyl;

or alternatively R⁴ and the adjacent substituent R³ or R⁵ may be connected to form a 5- or 6-membered heterocyclic ring that may be saturated, partly unsaturated or aromatic fused to the benzene ring, wherein the 5- or 6-membered fused ring ~~comprises~~ contains 1-3 heteroatoms independently selected from O, S, and N, where N may optionally be NR^a and S may optionally be SO or SO₂, said fused ring ~~optionally also comprising~~ containing 1-2 C=O groups in the ~~perimeter of the~~ ring, wherein said 5- or 6-membered heterocyclic fused ring is optionally substituted with 1-2 groups independently selected from R³.

30. (Cancelled)

31. (Previously Presented) A compound as recited in Claim 1, wherein the stereochemistry at the 2-position of the benzopyranyl ring is R.

32. (Previously Presented) A compound as recited in Claim 1, wherein the stereochemistry at the 2-position of the benzopyranyl ring is S.

33. (Cancelled)

34. (Cancelled)

35. (Previously Presented) A pharmaceutical composition comprising a compound as identified in Claim 1 and a pharmaceutically acceptable carrier.

36. (Currently Amended) A method for treating or controlling non-insulin dependent (Type 2) diabetes mellitus in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 13

37. (Currently Amended) A method for treating or controlling hyperglycemia in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

38. (Currently Amended) A method for treating or controlling lipid disorders, hyperlipidemia, or low HDL in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

39. (Currently Amended) A method for treating or controlling obesity in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

40. (Currently Amended) A method for treating or controlling hypercholesterolemia in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

41. (Currently Amended) A method for treating or controlling hypertriglyceridemia in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

42. (Currently Amended) A method for treating or controlling dyslipidemia and/or low HDL cholesterol in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

43. (Currently Amended) A method for treating or controlling atherosclerosis in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

44. (Currently Amended) A method for treating or controlling cachexia in a mammalian patient in need of such treatment which comprises the step of administering to said patient a therapeutically effective amount of a compound of Claim 1.

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 14

45. (Currently Amended) A method of treating or controlling one or more diseases, disorders, or conditions selected from the group consisting of (1) non-insulin dependent diabetes mellitus (NIDDM), (2) hyperglycemia, (3) impaired glucose tolerance, (4) insulin resistance, (5) obesity, (6) lipid disorders, (7) dyslipidemia, (8) hyperlipidemia, (9) hypertriglyceridemia, (10) hypercholesterolemia, (11) low HDL levels, (12) high LDL levels, (13) atherosclerosis and its sequelae, (14) vascular restenosis, (15) irritable bowel syndrome, (16) inflammatory bowel disease, including Crohn's disease and ulcerative colitis, (17) other inflammatory conditions, (18) pancreatitis, (19) abdominal obesity, (20) neurodegenerative disease, (21) retinopathy, (22) neoplastic conditions, (23) adipose cell tumors, (24) adipose cell carcinomas, such as liposarcoma, (25) prostate cancer and other cancers, including gastric, breast, bladder and colon cancers, (26) angiogenesis, (27) Alzheimer's disease, (28) psoriasis, (29) acne vulgaris, (30) skin diseases modulated by PPAR, (31) high blood pressure, (32) Syndrome X, (33) ovarian hyperandrogenism (polycystic ovarian syndrome), and other disorders where insulin resistance is a component, said method comprising the step of administering administration of an effective amount of a compound of Claim 1.

46. (Currently Amended) A method of treating or controlling one or more diseases, disorders, or conditions selected from the group consisting of (1) diabetes mellitus, and non-insulin dependent diabetes mellitus (NIDDM), (2) hyperglycemia, (3) impaired glucose tolerance, (4) insulin resistance, (5) obesity, (6) lipid disorders, (7) dyslipidemia, (8) hyperlipidemia, (9) hypertriglyceridemia, (10) hypercholesterolemia, (11) low HDL levels, (12) high LDL levels, (13) atherosclerosis and its sequelae, (14) vascular restenosis, (15) irritable bowel syndrome, (16) inflammatory bowel disease, including Crohn's disease and ulcerative colitis, (17) other inflammatory conditions, (18) pancreatitis, (19) abdominal obesity, (20) neurodegenerative disease, (21) retinopathy, (22) neoplastic conditions, (23) adipose cell tumors, (24) adipose cell carcinomas, such as liposarcoma, (25) prostate cancer and other cancers, including gastric, breast, bladder and colon cancers, (26) angiogenesis, (27) Alzheimer's disease, (28) psoriasis, (29) acne vulgaris, (30) skin diseases modulated by PPAR, (31) high blood pressure, (32) Syndrome X, (33) ovarian hyperandrogenism (polycystic ovarian syndrome), and other disorders where insulin resistance is a component, said method comprising the step of administering administration of an effective amount of a compound of Claim 1, and an effective amount of one or more other compounds selected from the group consisting of:

(a) insulin sensitizers; (i) PPAR γ agonists; (ii) biguanides; (iii) protein tyrosine phosphatase-1B (PTP-1B) inhibitors; (iv) dipeptidyl peptidase IV inhibitors;

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 15

- (b) insulin or insulin mimetics;
- (c) sulfonylureas;
- (d) α -glucosidase inhibitors;
- (e) cholesterol lowering agents selected from the group consisting of (i) HMG-CoA reductase inhibitors, (ii) sequestrants, (iii) nicotinyl alcohol, nicotinic acid or a salt thereof, (iv) PPAR α agonists, (v) PPAR α / γ dual agonists, (vi) inhibitors of cholesterol absorption, (vii) acyl CoA:cholesterol acyltransferase inhibitors, and (viii) anti-oxidants;
- (f) PPAR δ agonists;
- (g) antiobesity compounds (anorectics);
- (h) an ileal bile acid transporter inhibitor; and
- (i) anti-inflammatory agents.

47. (Currently Amended) A method for the treatment or control of one or more conditions selected from hypercholesterolemia, atherosclerosis, low HDL levels, high LDL levels, hyperlipidemia, hypertriglyceridemia, and dyslipidemia, which method comprises the step of administering to a mammalian patient in need of such treatment a therapeutically effective amount of a compound of Claim 1 and a therapeutically effective amount of an HMG-CoA reductase inhibitor.

48. (Original) The method as recited in Claim 47, wherein the HMG-CoA reductase inhibitor is a statin.

49. (Previously Presented) The method as recited in Claim 48, wherein the statin is selected from the group consisting of lovastatin, simvastatin, pravastatin, fluvastatin, atorvastatin, itavastatin, rosuvastatin and rivastatin.

50. (Currently Amended) A method for the treatment or control of one or more conditions selected from inflammatory conditions, inflammatory bowel disease, Crohn's disease, and ulcerative colitis, which method comprises the step of administering to a mammalian patient in need of such treatment a therapeutically effective amount of a compound according to Claim 1.

51. (Currently Amended) A method for treating or preventing atherosclerosis in a mammalian patient in need of such treatment comprising the ~~administration~~ the step of administering to

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 16

said patient of an effective amount of a compound of Claim 1 and an effective amount of an HMG-CoA reductase inhibitor.

52. (Original) The method as recited in Claim 51, wherein the HMG-CoA reductase inhibitor is a statin.

53. (Previously Presented) The method as recited in Claim 52, wherein the statin is selected from the group consisting of lovastatin, simvastatin, pravastatin, fluvastatin, atorvastatin, itavastatin, rosuvastatin and rivastatin.

54. (Previously Presented) A pharmaceutical composition comprising: (1) a compound according to Claim 1, (2) an HMG-CoA reductase inhibitor, and (3) a pharmaceutically acceptable carrier.

55. (Previously Presented) A pharmaceutical composition comprising (1) a compound according to Claim 1, (2) one or more compounds selected from the group consisting of :

(a) insulin sensitizers; (ii) biguanides; (I) PPAR γ agonists; (iii) protein tyrosine phosphatase-1B (PTP-1B) inhibitors, and (iv) dipeptidyl peptidase IV (DP-IV) inhibitors;

(b) insulin or insulin mimetics;

(c) sulfonylureas;

(d) α -glucosidase inhibitors;

(e) cholesterol lowering agents selected from the group consisting of (i) HMG-CoA reductase inhibitors, (ii) sequestrants, (iii) nicotinic alcohol, nicotinic acid or a salt thereof, (iv) PPAR α agonists, (v) PPAR α / γ dual agonists, (vi) inhibitors of cholesterol absorption, (vii) acyl CoA:cholesterol acyltransferase inhibitors, and (viii) anti-oxidants;

(f) PPAR δ agonists;

(g) antiobesity compounds (anorectics);

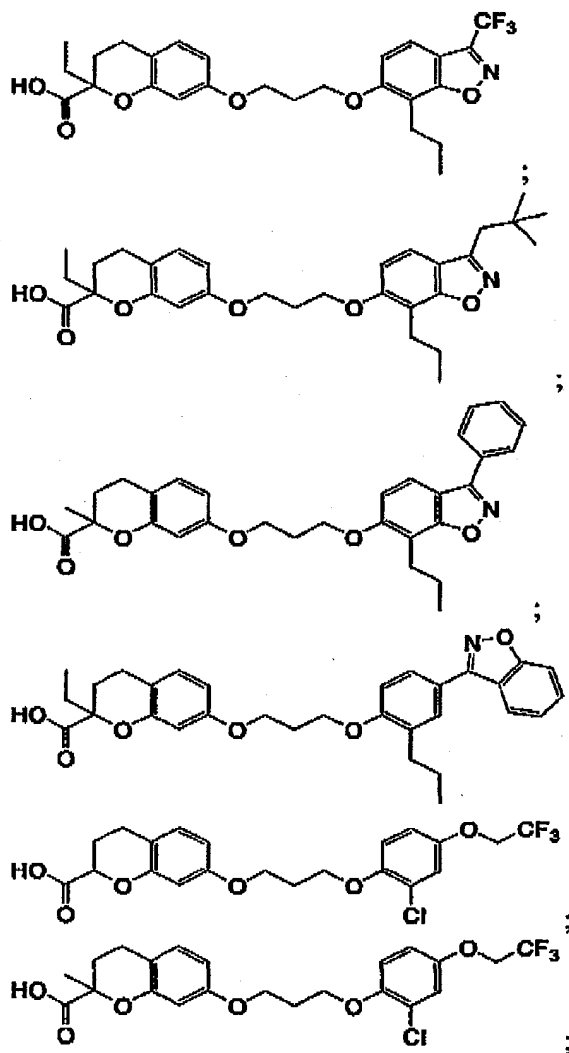
(h) an ileal bile acid transporter inhibitor; and

(i) anti-inflammatory agents; and

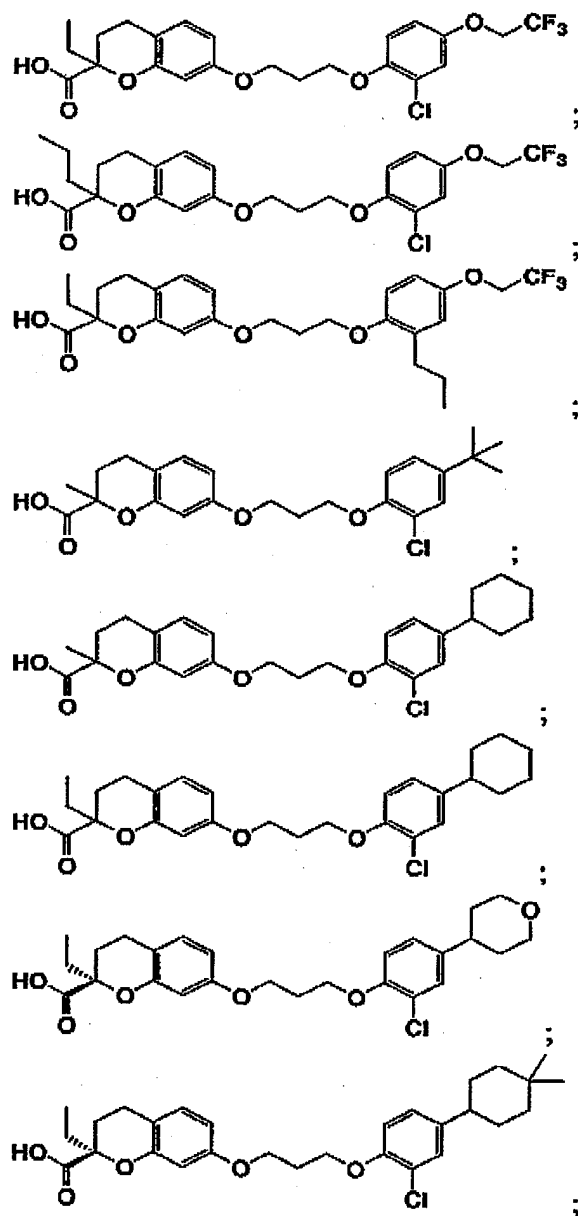
(3) a pharmaceutically acceptable carrier.

U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 17

56. (Previously Presented) A compound represented by a structure shown below, or a pharmaceutically acceptable salt or prodrug thereof, wherein the structure is selected from the group consisting of:

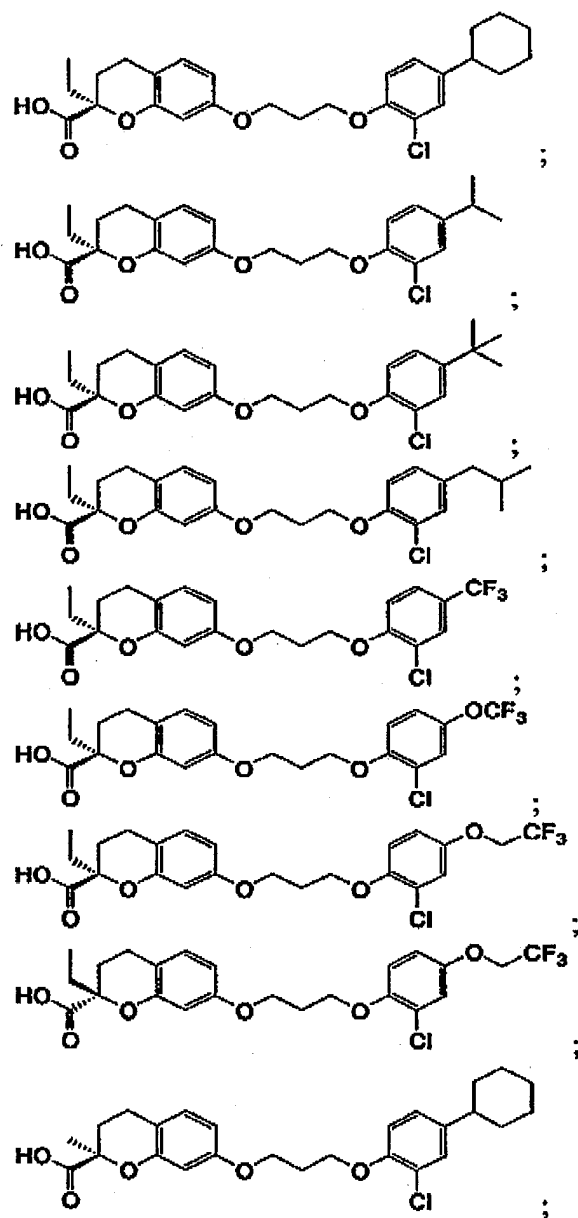


U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 18



U.S.S.N.
CASE NO.
Page No.

10/021,667
20768
19



U.S.S.N. 10/021,667
CASE NO. 20768
Page No. 20

